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EXAMINER	
HINES, JANA A	

ART UNIT	PAPER NUMBER
1645	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/583,771	ESCARGUEL, CLAUDE	
	Examiner	Art Unit	
	JaNa Hines	1645	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 July 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _____ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *1-34* are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *7/18/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of the species election in the reply filed on July 16, 2008 is acknowledged. The traversal is on the ground(s) that the office did not show a prima facie case of serious burden. This is not found persuasive because the basis of the species election was on the grounds that the species are patentably distinct. In the office action dated June 23, 2008, the action stated that applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. Applicants failed to make a showing that the species are not patentably distinct. Therefore the species election requirement is still deemed proper and is therefore made FINAL.

2. Claim 13 has been withdrawn from consideration. Claims 1-12 and 14-34 are under consideration in this office action.

Information Disclosure Statement

3. The information disclosure statement (IDS) submitted on July 18, 2006 was filed. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Specification

4. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

5. Claims 2-12 and 14-34 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent of claims 2-12 and 14-34. See MPEP § 608.01(n). For instance, the claim recite "Method as in any of claims 1 to 12" is objected too. Therefore clarification is required.

6. Dependant claims 2-12 and 13-23 and 25-34 refer to "Method as in claim…" "Serological diagnosis method…" "Kit as in claim…", however the suggested claim language is to use of the article "The." Therefore the suggested claim language is "The method of claim…" or "The kit of claim …."

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-12 and 14-34 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a) Regarding claims 1-12 and 1-34, the phrases "preferably" "optionally" and "when applicable" render the claims indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

b) The term "corresponding" in claims 1 and 18 is a relative term which renders the claim indefinite. The term "corresponding" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. For instance, it is unclear if corresponding means that the control antigen is related to/similar to in related position or purpose to a non-specific class M immunoglobulin or if the term means the control antigen is the specific binding partner of a non-specific class M immunoglobulin. Therefore clarification is required to overcome the rejection.

c) In claim 1, step (d) it is unclear how the method controls the presence of a human serum in the tested sample. Therefore clarification is required to overcome the rejection.

d) Claim1, step (2) recites the limitation "said detection substance" in the claim. There is insufficient antecedent basis for this limitation in the claim. Also, it is unclear if applicant intends the use of the first or second detection substance.

e) The preamble of the claims is drawn to *in vitro* serological method for diagnosing microbial agents by immunodetection. There is no correlation step which correlates the *in vitro* serological method for diagnosing microbial agents by

immunodetection to the reaction of the first control antigen, the lack of reaction of the second control antigen and when applicable the reaction of the third control antigen with the first detection substance in the even of an IgM assay. Therefore, the goal of the preamble is not commensurate with the steps of the method, since no diagnosis of microbial agents seemed to be achieved.

f) Claim 3 is unclear. The claim refers to a "fourth control antigen is attached in the presence of said second detection substance which is a substance reacting with an immunoglobulin of the patient species and not reacting with said fourth control antigen, preferably an anti-immunoglobulin antibody of the patient species not reacting with said fourth control antigen, the control of the presence of a serum being positive if said fourth antigen reacts with said serum sample and said second detection substance." It is unclear how the 2nd detection substances causes the 4th control antigen to attach to the solid support but does not react with the 4th control antigen. Therefore clarification is required to overcome the rejection.

g) Claims 4, 9, 11, 15, 20 and 31 recites alternative limitations which are improperly expressed. Alternative expressions are permitted if they present no uncertainty or ambiguity with respect to the question of scope or clarity of the claims. One acceptable form of alternative expression, which is commonly referred to as a Markush group recites members as being "selected from the group consisting of A, B and C". Another acceptable form recites "selected from 1, 2, 3, or 4." Applicant may correct this by amending the claim to recite the appropriate language.

h) Claim 7 is multiply dependant upon claim 3, however it is unclear whether applicants for the control antigens to be attached by physical adsorption or if the control antigens are attached in the presence of said second detection substance. Therefore clarification is required to overcome the rejection.

i) Claim 14 is dependant upon claim 1, however claim 1 does not require a first, second, third and fourth control antigens. There claim 14 recites the limitation "said first, second, third and fourth control antigens". There is insufficient antecedent basis for this limitation in the claim. Thus, clarification is required to overcome the rejection.

j) Claim 17, recites the limitation "said immunoglobulin" in the claim. There is insufficient antecedent basis for this limitation in the claim, because it is unclear Also, it is unclear if applicant intends the use of the first or second detection substance.

k) The term "threshold" in claim 21 is a relative term which renders the claim indefinite. The term "threshold" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The metes and bounds of the term "threshold" is unclear, since what determines the threshold has not been defined. Therefore clarification is required to overcome the rejection.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-12 and 14-34 are rejected under 35 U.S.C. 102(b) as being anticipated by Wong et al., (US Patent 5,478,753 published December 26, 1995).

The claims are drawn to an *in vitro* serological method for diagnosing microbial agents by immunodetection, wherein the presence of the microbial agent is detected and, preferably, the quantity of patient immunoglobulins is assayed of both classes M and G, or only class G, specific to a microbial antigen characteristic of the microbial agent, in a patient's serum sample to be tested, by detection and preferably by quantification of an immunological reaction complex between said microbial antigen to be detected and a said specific, class M immunoglobulin for IgM assay and/or respectively a said specific, class G immunoglobulin for IgG assay using a first detection substance and/or respectively a second detection substance, preferably an antibody only reacting with a said immunoglobulin of the patient species of class M and/or respectively G. The claims are also drawn to a diagnosis kit and method of preparing a solid support on which at least one microbial antigen is attached.

Wong et al., teach calibrator and control compositions for IgM serology assays testing for infectious diseases (col. 1, lines 5-10). The negative calibrators typically consist of human sera (col. 1, lines 10-12). Since the first immune response is the production of IgM antibodies, and because IgM antibodies are short-lived, assay for these antibodies are important since such assays provide an early indication of a recent infection in a patient (col. 1, lines 15-20). These and other objects and advantages are

accomplished in accordance with the invention by providing calibrator/control compositions for use in an assay to detect antibodies to infectious diseases, which includes a nonspecific IgM immunoglobulin and a non-IgM antibody (col. 1, lines 40-50). Wong et al., teach the binding properties of both the nonspecific IgM immunoglobulin and the specific antibody segments of the composite antibody of the invention are exploited in the diagnostic assay col. 1, lines 57-60).

Wong et al., teach the nonspecific IgM immunoglobulins may be from humans or from animals and the antibodies which are specific to the infectious disease agent of interest may be of any class, i.e., IgG, IgA, IgD or IgE (col. 1-2, lines 65-3). The specific IgG antibodies are preferred since they are abundant and are present in individuals for a long period of time, due to the long duration of the IgG response to the infectious disease agent (col. 2, lines 2-6).

Wong et al., teach the calibrator compositions are typically used to determine a reference signal cutoff value for the particular analytical apparatus used to carry out the assay (col. 2, lines 7-10). The control compositions may contain an amount of the composite antibody (col. 2, lines12-15). In the assay method of the invention, Wong et al., teach there is immobilized to a solid carrier a capture material which is selected to bind specifically to the composite antibody present which generally comprises a fluid sample which is suspected of containing the IgM antibodies of interest, and a labeled conjugate are brought into contact with the solid carrier material (col. 2, lines 18-24). The conjugate comprises a label moiety, may be directly or indirectly detectable, linked to a detector material which is selected to bind to the composite antibody and to the

antibodies of the infectious disease agent of interest which may be present in a sample fluid. Subsequently, after a period of time to allow the requisite binding interactions to take place, unbound labeled conjugate is separated from bound labeled conjugate and a signal generated as a function of the label of the free or bound conjugate. The signal can be utilized to calibrate the analytical instrument in the case of the positive calibrator/control composition or to determine the presence of and/or the amount of antibodies of interest in the case of a test sample. The calibrator/control composition and assay method of the invention may be used for any IgM serology assay, that is, any assay for antibodies to an infectious disease (col. 2, lines 24-36). Typical bacterial infectious diseases for which IgM screening may be carried out include lyme disease and syphilis (col. 2, lines 40-44).

Wong et al., teach the nonspecific IgM immunoglobulins may be from humans or from animals which are closely phylogenetically related to humans such as animals (col. 3, lines 3-6). The nonspecific IgM immunoglobulins used in the composite antibodies may be the whole immunoglobulin which binds to the capture material on the solid carrier (col. 3, lines 20-25). The specific, non-IgM antibodies incorporated in the composite antibodies of the invention may be monoclonal or polyclonal and may be obtained from humans or from animals (col. 3, lines 27-32). Wong et al., teach providing antibodies which are specific to the infectious disease agent of interest and which will bind to the detector material present in the conjugate. Such specific antibodies may be obtained from any animal which has been exposed to, or immunized with, the etiologic

agent of interest or a fragment of the etiologic agent; preferable animals are rabbits, goats and mice. For polyclonal specific antibodies, it is preferred to use IgG antibodies since they are abundant and readily available. Monoclonal antibodies of all classes, i.e., IgG, IgA, IgD and IgE, are readily available. The whole specific, non-IgM antibodies can be utilized. (col. 3, lines 33-46).

Wong et al., teach serum collection from the host animal following the immunization regimen and tested according to a known assay method for the infectious disease of interest. A sufficiently high antibody titer is indicated by a positive result on the assay. When the antiserum meets the required specifications, the antiserum is typically collected from the animal at intervals. Of course, those skilled in the art will recognize that the requisite antibody titer will vary according to the assay method for which the calibrator or control solution is desired (col. 4, lines 4-13).

Wong et al., teach the assay method involves the use of a labeled detector material. The detector material in the labeled conjugate may be any which will bind to the antibodies of interest and to the composite antibody present in the calibrator/control composition. The detector material may be of any type including recombinant or purified cultured antigens, e.g., extracts from the entire infectious disease agent which may be a bacterium, etc., analogues thereof, synthetically prepared peptide sequences or recombinant proteins. Typical suitable binding materials which can be incorporated into the labeled conjugate include, for example, monoclonal and polyclonal anti-human IgM antibodies, lectins such as mannan binding protein and chick pea lectin and the like. Monoclonal antibodies and synthetically prepared peptide sequences are preferred

because of their binding specificity (col. 5, lines 25-43). Any of the labels known for use in immunometric assays may be utilized including, for example, fluorescent moieties, enzymes, chemiluminescent moieties and radioactive materials. Any change in fluorescence, chemiluminescence, radioactivity or other change in visible or near visible radiation can be exploited. Thus, the label may be directly or indirectly detectable (col. 5, lines 48-54).

Wong et al., teach a method which exploits any solid phase assay technique so long as the solid phase is capable of capturing the composite antibodies of the calibrator/control composition and the antibodies of interest in a test sample. The capture material immobilized to the solid carrier may be selected from the materials described with respect to the detector material of the labeled conjugate. Any suitable material can be used as the capture agent, including monoclonal antibodies directed against human IgM antibodies (col. 5, lines 60-65). Wong et al., teach the solid carrier may be of any suitable type, including microtiter plates, beads such as of polymeric material, magnetic material or glass, porous materials such as membranes or fibrous materials such as glass and the like. Further, any suitable assay technique may be practiced, including the "forward" assay technique wherein the sample fluid is applied to the solid carrier, followed after the period of incubation by application of a labeled conjugate solution and the "reverse" assay technique wherein the sample fluid is first combined with a labeled conjugate solution to form a complex and the resulting complex is applied to the solid carrier (col. 5-6, lines 66-15).

Wong et al., teach the method exploiting the binding characteristics of both the nonspecific IgM immunoglobulin and the specific, non-IgM antibody segments of the composite antibodies in the calibrator/control composition. In one embodiment the capture material immobilized on the solid carrier, for example, a monoclonal antibody, is selected so as to bind to the nonspecific IgM immunoglobulin segment of the composite antibody (col. 6, lines 32-50). The binding material may be immobilized thereto by any of various known techniques including physical entrapment and chemical bonding (col. 6, lines 62-65). Wong et al., teach the method being suitable for use in automated analytical test instruments (col. 7, lines 40-43).The assay method involves the use of negative and positive calibrators as pointed out previously. Generally, there is determined a reference signal cutoff value for the particular apparatus employed to carry out the assay. The reference cutoff value may be determined in accordance with various techniques which are known in the art. For example, a cutoff value can be obtained by preparing a dose response curve. However it is determined the reference cutoff value is then validated by testing large numbers of known positive and negative clinical samples (col. 9, lines 11-16).

Therefore Wong et al., teach the instantly claimed invention.

Conclusion

9. No claims allowed.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ja-Na Hines whose telephone number is 571-272-0859. The examiner can normally be reached Monday thru Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor Robert Mondesi, can be reached on 571-272-0956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/JaNa Hines/
Examiner, Art Unit 1645

/Mark Navarro/

Primary Examiner, Art Unit 1645